Values and propensity to adopt new HRM web-based technologies as determinants of HR efficiency and effectiveness: a firm level resource-based analysis

Dolan, Simon L.; Acosta-Flamma, Christian

VALUES AND PROPENSITY TO ADOPT NEW HRM WEB-BASED TECHNOLOGIES AS DETERMINANTS OF HR EFFICIENCY AND EFFECTIVENESS: A FIRM LEVEL RESOURCE-BASED ANALYSIS[1]

SIMON L. DOLAN & CHRISTIAN ACOSTA-FLAMMA

Abstract: *This paper explores the usefulness of analyzing a firm's performance from a combination of a web-based human resource view and strategic human resource characteristics. In addressing issues pertaining to HR efficiency and HR effectiveness, the Technology Adoption Life Cycle (TALC) model (Moore 2001) is introduced. The latter helps to classify HR practitioner's adoption behavior along the 'TALC' continuum where HR functions and the web-based HRMS are classified. This classification facilitates a better understanding of the HR information technology and strategic HR relationship. The empirical study is based on a web-based portal in which 192 SAP client-users organizations across 5 continents participated. The findings identify the configurations which add significantly to good or poor HR efficiency and HR effectiveness dimensions throughout the usage and implementation of HR technology. It seems that innovative HR technologies play a strategic and operational role in adding value to the HR department's performance. The results show that when some HR technology functionalities are absent or poorly implemented, there are noticeable consequences for the HR department.*

Introduction

Most companies are doing far better at executing their current activities than at adapting to changes in their business environment. Very few companies can do both well. While the literature on change and adaptation identifies numerous reasons for the lack or fear of adaptation, three barriers to adaptability are deeply rooted in the nature of organizations:

1 Note: This paper is based on the doctoral thesis of the second author (Christian Acosta-Flamma) supervised by the first author (Simon L. Dolan). The authors wish to thank Vicenta Sierra from ESADE for her statistical advice concerning the application of the CHID analyses.

(a) inflexibility in the mental models of their managers; (b) organizational complexity, driven by the demands of execution; and (c) mismatches between current resources and future opportunities.

Overcoming these barriers requires a rethinking of what GE's former CEO Jack Welch has called an organization's 'social architecture' – the bringing together of individual behavior, structure, and culture – which determines a company's long-term performance. Dolan & Garcia (2002) called this adaptation of new values a 'cultural reengineering'.

And if adaptation and renovation is a complex phenomenon to understand within the general organizational context, understanding the same for HR practitioners, especially in innovating in technology for enhancing strategy, has not been dealt with sufficient rigor. The study reported herein focuses on the cross disciplines of change management and decisions about innovations, the use on online technology as the innovation driver, and the role of Human Resource Management in implementing it in view of becoming more strategic. Moreover, the purpose of this paper is to explore the impact of new technologies on HR efficiency and effectiveness and also to better understand the dynamics of adaption of new technologies. The Technology Adoption Life Cycle model (hereafter TALC) is used to position HR departments in utilizing the web-based HRMS for enhancing their respective efficiency/effectiveness.

Research on web-based HRMS adaptation and implementation is scant, anecdotal, and stems primarily from experiences of some firms and/or consultants. It seems that too often decisions to adopt web-based HRMS are driven by network-based effects that built on partnership (i.e., Lepak & Snell 1998) and cost considerations without sufficient attention to strategic issues. Numerous reasons can be identified in explaining why HR managers are having their eyes 'wide shut' toward these fundamental strategic HR issues. For one, many organizations streamline HR activities into information technology and simultaneously downsize their HR personnel. The bottom-line is that innovative HR technology provides more processing power to the end-users, and has a substantial impact on bottom-line results of the firm due to efficiencies in workflows and downsizing (Beheshti & Bures 2000) but not necessarily on strategic issues.

Scholars writing in the field of HR productivity and/or performance have insisted on distinguishing the concept of HR efficiency from HR effectiveness, and by and large the latter was related to strategic implications (Ulrich 1998; Wright 2001). Evidence suggests that the basic HR activities require certain inter-organizational workflows, resources, and capabilities, which can be employed from several resources (Schuler 1992; Walker 1992). As a matter of fact, work of personnel departments described in past decades is characterized by manual handling, up to the point where the organizations began to electronically automate some of these processes in the 1960's (Burgelman et al. 2001).

Due to complexity in programming, capabilities, and limited resources, today HR executives still rely on internal IT professionals to develop and maintain their HRMS. Before the client-server architecture evolved in the late 1980's, every single HR automation process came largely in form of mainframe computers that could handle large amounts of data transactions. Today, by contrast, the same operations can be dealth with directly online with less sophisticated and more user-friendly facilities.

HR executives have a dilemma to solve: on one hand they can *outsource the* administrative HR activities to a third party outside the organization (i.e., traditional functions such as payroll, compensation, benefits, etc.) or be involved in these operations themselves, which requires a set of competences to do the relevant operations internally. By and large, the literature suggests that there are costs and benefits to either option and there is no clear cut advantage to either. The principal argument for outsourcing administrative HR tasks is to free resources from focusing on administrative issues to focusing on strategic issues. In this context, it is argued in this paper that new technologies (including web-based ones) enable a process that we call 'internal sourcing' to technology which may result in freeing HR resources to focus on strategic issues without having the dependencies on outside sources.

Obviously, both HR initiatives – outsourcing and internal sourcing of HR activities – do more than just cut costs and conceal different strategic advantages. Indeed both allow taking benefits of distinctive HR and technical skills and high performances offered to enhance the organization's bottom-line results. While these two distinctive HR options yield similar economic outcomes, it is not only possible, but sometimes preferable, to *internally source* key HR activities into innovative web-based HR applications, as this option provides bigger opportunities for most HR departments to reinforce their strategic capability and position from within organizations.

Looking at HR units in terms of their resource endowments has a long tradition in the HR management field. The analysis is typically confined, however, to categories such as the eight basic HR activities to include 1) HR planning & selection, 2) job analysis, 3) HR coverage to the organization, 4) HR appraisal & evaluation, 5) training & development, 6) payroll, 7) health & safety issues, and 8) strategy & international HR management (Dolan, Valle, Jackson & Schuler 2003).

The idea of looking at newly developed web-based HRM technologies as a principal vehicle to stimulate strategic HRM goes back to the work of Ulrich (2000), but apart from Lepak & Snell (1998), has received relatively little attention. It is argued in this paper that the *integrated web-based HR view of the firm* can provide a framework for addressing some key issues in the HR practice and strategy formulation process to include questions, such as:

a) Which of the current manual and administrative HR routine activities could and should be streamlined into web-based HRMS functionalities to achieve a better cost per processed workflow ratio and greater HR strategy capabilities?

b) Which HR capabilities could and should be further developed to become a reliable strategic business partner to the organization?

c) In what sequence and extent could and should HR be involved in strategic formulation and execution?

d) In what types of firms will TALC users be exploiting the desirable strategic benefits from streamlining HR processes into portal technologies?, and, finally,

e) What is the optimal downsizing / implementation ratio?

Within this context, the following propositions are suggested:

1. Examining firms in terms of their respective TALC behavior may lead to new and different insights than examining the latter from the traditional HR & IT perspective.

2. Aligned with the 'TALC' model one can identify five different types of HR management practices, while some show higher impacts on the organization's bottom-line results through more strategic HRM decision making (see Figure 1).

3. HR strategy for a larger organization involves striking a balance between the exploitation of web-based HRMS applications delivering routine administrative HR services to the workforce's desktops and becoming more involved with the organization's business model and industry setting. In analogy, freeing valuable HR administrative tasks to better concentrate on HR strategic tasks.

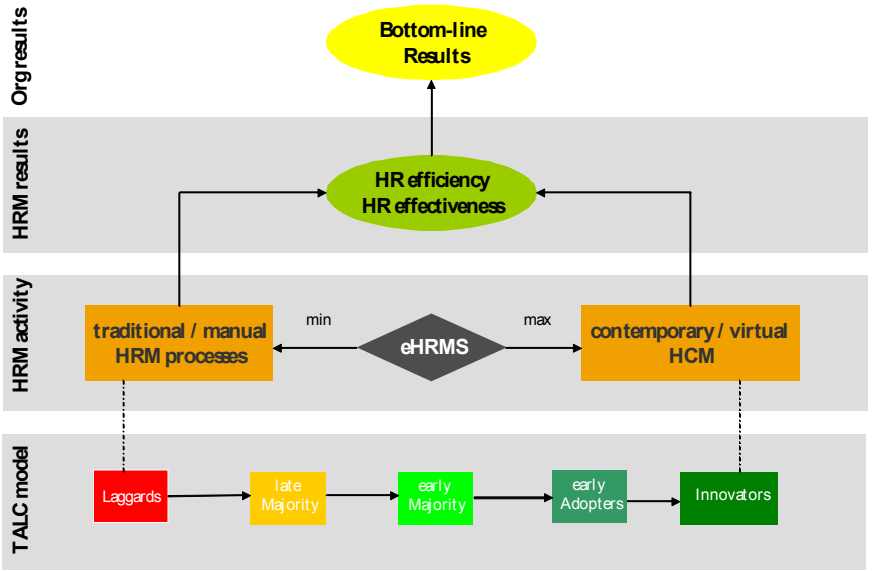
4. The acquisition of a web-based HRMS can also be seen as an acquisition of a bundle of streamlined HR functionalities within a highly complex and global business environment. By basing the purchase on the complete Human Capital Management (hereafter HCM) functionality set of streamlined HR activities into web-based or portal technologies, one can, *ceteris paribus*, maximize both HR efficiency and HR effectiveness levels.[2]

2 Note: Human Capital Management (HCM) is a term used by SAP, a German based multinational software company, as a component of their mySAP ERP HCM product which helps companies align Employees, Processes, and Strategies.

Conceptual framework

The concept of 'TALC' refers to a process by which an organization adopts and responds to discontinued innovations (Moore 2001), such as is the case with web-based HRMS modules. More specifically, an organization's TALC user model at a given time could be divided into five different categories as follows: (1) laggards, (2) late majority, (3) early majority, (4) early adopters, and (5) innovators. In parallel, the HRM practices can also be placed on the TALC continuum, whereby the traditional/manual HRM practice are closely linked with laggard organizations, and the contemporary or virtual HRM practices are linked to innovators representing the other pole. The remainder of the HR practices can be placed in the middle range of the scale. As with most scales employed in the social and behavioral sciences we assume a normal distribution of organizations along this scale. The proposed model is shown in Figure 1.

Figure 1 Conceptual Model



An underlying premise in this study is that, if an HR professional for any given organization is still performing HR routine administrative activities, which is characterized in our model as the traditional/manual HRM pole (see Figure 1), the more the HR practitioner is adhering to manual-administrative mode, the higher the costs associated in executing tasks and the less time to focus on strategic thinking. By contrast, it is proposed that HR activities in a contemporary/virtual HRM environment will increase HR efficiency in managing some core areas and enable to divert the extra time gained to spend more on strategic themes. More specifically, and following this logic, the SAP model, for example, identifies the following four areas where efficiency can be gained in using their technology: 1) Employee Life-Cycle Management, 2) Employee Transaction Management, 3) HCM Service Delivery, and 4) Workforce Deployment.

The following examples will explain more specifically the hypotheses about strategic benefits and respective conditions for the use and application of a web-based technology:

a. If an organization has streamlined HR activities and electronic workflows in place, which allows the usage of web-based technologies to deliver HR services to the entire HCP, then various cost and resource benefits will occur. These *internally outsourced* processes should theoretically lead to more strategic involvement from the HR 'freed' staff.

b. If an organization has not yet streamlined its routine, administrative HR activities into an HRMS module and continues to perform them under the traditional HRM concept, these cost and resource benefits can only be positive if they are *outsourced* to an external HR provider or if labor costs of the organizations Shared Service Centre (SSC) are comparatively low. In this case, strategic involvement could theoretically also be achieved.

It is worth noting that the leading HR scholars today suggest that any HR practitioner or TALC user, who wants to add value to the 21st century firm, needs to become a strategic business partner (Ulrich 1987, 1999), delivering apart from the standard set of HR services unique strategic management solutions from at least the HR focus of the firm. Streamlining HR activities into portal HRMS technologies without a previous analysis of the present and future position on the five different TALC user-model categories can leave the organization and the HR practitioners vulnerable to not achieving immediately the desired results – such as increased HR efficiency and HR effectiveness effects – from this costly transformation process.

Moreover, it is possible to identify five different HRM core practices in relationships to the TALC users. Table 1 summarizes the streamlined HR activities into each HRM core practice.

Table 1 HR activities that can be converted into the HCM technology solution

Note: Examples are used with permission of SAP AG from the HCM solution.

Table 2 TALC – HR functionality matrix

TALC / Functionality	Laggard	Late majority	Early majority	Early adopter	Innovator
Employee Life-Cycle Management	N/A	X	X	X	X
Employee Transaction Management	N/A	X	X	X	X
HCM Service Delivery	N/A			X	X
Workforce Deployment	N/A		X	X	X
Portal Deployment	N/A				X

Note: Terminologies of the functionalities are based on the SAP HCM solution.

The terminology used in Table 2 pertaining to the core HRM practices is by no mean exhaustive. It is a terminology developed by SAP for the HCM solution. Other developers of HRM software platforms use other terms. Nonetheless, an organization which, at a given time, finds itself in some sense ahead of others may use this particular HCM framework for analysis that leads to gradually increasing the amount of HR technology involved in the organization. It is the properties of this analysis on web-based HCM practices and their mode of novel capabilities acquisition which allow this to be done. *What an organization wants is to create a situation where its own HRM practice position directly or indirectly makes it more difficult for others to catch up (i.e., to be idiosyncratic)*. To analyze an attractive web-based HCM practice for a general potential for high returns, one has to look at the ways in which an organization with a strong market and management position can influence the HR function to develop rare and not easy imitable HR practices as well as talent.

In general, one should keep in mind that most web-based HRMS processes are seamlessly integrated into other functional modules of the Enterprise Resource Planning (hereafter ERP) and workflows of the organization. As a result, a given streamlined HRM activity will often have consequences in several other departments of the organization, each yielding part of the results. A routine and administrative workflow such as payroll, for instance, which could be performed more cost efficient using technology, is a good example. The general attractiveness of web-based HRMS applications, understood as its potential to support the HR function, is only a necessary, not a sufficient, condition for a given organization to reassure 21st century HRM practice developing rare and inimitable HR services and HCP talent. Organizations and HR practitioners should opt for gradually streamlining HR activities into HRMS applications, whether client/server or portal technology, and must recognize those HR related workflows, by not only reducing its HR cost structure but also bearing in mind the potential to use freed HR resources for additional strategic HCM issues instead of downsizing or externalizing the function as a whole.

The above discussion raises some fundamental HR issues to which organizations and HR executives need to address: can they get higher returns by implementing web-based HRMS modules? Overall, the innovator advantage – high impact TALC position – should yield high returns for the stakeholders of an organization were the utilization of web-based HRMS applications is dominating over the manually processed workflows. Thus, information was collected and analyzed attempting to address this question. Two main themes were articulated: (1) which of the HR functionalities corresponding to each of the five TALC user groups is used by the firm (data was based on the 'mySAP ERP HCM solution'); and (2) what is the level of HR efficiency and HR effectiveness that HR professionals achieve by *internally outsourcing* these HR activities and processes into the 'mySAP ERP HCM solution'? The latter formed the basis for the empirical data sources and enabled comparative analyses which are presented hereafter.

Methods and procedures

Data was furnished by Top Management, senior HR Managers, HR Professionals, HR Systems, and Line Managers who are familiar with the 'mySAP ERP HCM solution' and also with the HR operations in their respective organizations. More specifically, these individuals assume to act as gatekeeper sources for their firm. By filling up an online questionnaire, information was gathered regarding: (1) streamlined HRMS functionalities, (2) perceived level of HR efficiency, (3) perceived level of HR effectiveness, (4) perceived impact on bottom-line results, and (5) perceived level of strategic involvement, when innovative HR technologies are being introduced to the HR function.

Measures and instruments

Using an online survey among SAP worldwide users, questions were directed toward measuring (1) the level of implementation behavior on HR functionalities within organizations and their respective HR departments, (2) the perceptions of HR efficiency and HR effectiveness, and (3) how new HR technologies satisfy and change HR professionals involvement as being critical to firm performance. Given the number of dimensions to be measured coupled with the requirements for internal reliability, the usual format of standardized questions and Likert-type scales (0-6 range for most items) was employed. Data was gathered during the Summer/Autumn of 2004. For strategic considerations, an attempt was made to keep the questionnaire relatively brief, as otherwise the response rate would have been affected.

The TALC measure: Based on an HR functionality matrix (see Table 3) the TALC model was operationalized. The checked entries indicate the implemented HR functionalities streamlined into HR technology applications. The count of the relative number of HR modules technology implementation was used to classify companies along the 5 categories:

Table 3 Solution functionalities

Based on "mySAP ERP HCM "	Implemented	Planned
Personnel Record & Administration	❒	❒
Payroll	❒	❒
Benefits	❒	❒
Organizational Management	❒	❒
Time Management	❒	❒
Travel Planning & Travel Expense Management	❒	❒
E-Recruiting	❒	❒
Performance & Appraisal Management	❒	❒
Compensation	❒	❒
E- Learning	❒	❒
Training & Employee Development	❒	❒
Manager Self-Service	❒	❒
Employee Self-Service	❒	❒
Employee Collaboration	❒	❒
Reporting & Benchmarking	❒	❒
Health & Safety	❒	❒

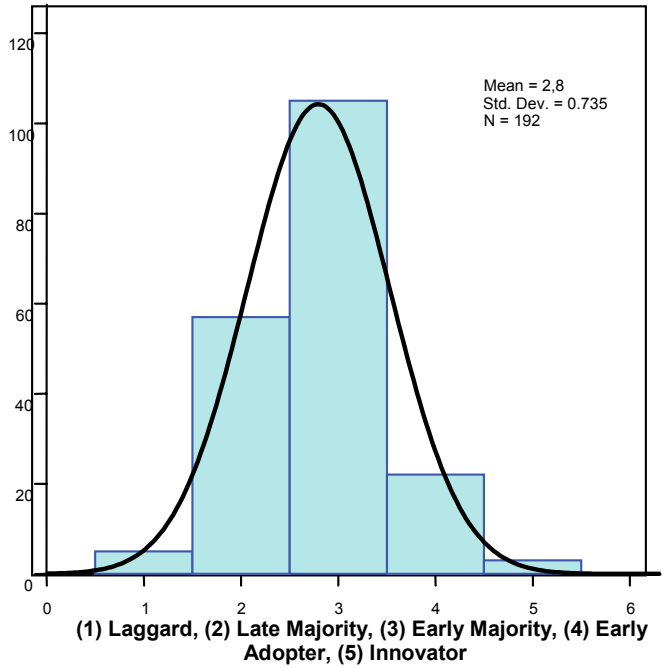
The **Laggards** are companies that neither consider usage of technology in their line of business nor have externalized/outsourced major HR activities to third party HR providers; the **Late Majority** adopted up to two core HR functions; the **Early Majority** have implemented, besides the previously described core functionalities, the **'Workforce Deployment'** functionality, which is structured in the following HR sub-functionalities: project resource planning, resource and program management, call-centre staffing, and retail scheduling; the **Early Adopter** users are true revolutionaries in business (Moore 2001) who employ a broad set of HR sub-functionalities, which includes Manager Self-Service (MSS), Employee Self-Service (ESS), Employee Interaction Center (EIC), and Alternate Delivery Channels (ADC). In a nutshell, the Employee Interaction Center connects HR professionals with employees through a HR call-centre or help-desk application, based on a shared service model; finally, the **Innovators** are the technology enthusiasts who are fundamentally committed to the new HCM technology by employing the latest technological advancement, portal technology deployment, and adopt all HCM core functionalities to be included into the web-based HR application.

The distribution of the TALC model in the sample is described in Table 4 and Figure 2.

Table 4 Distribution of the Sample with the TALC Model

	n (#)	Valid Percent	Cumulative Percent
Laggards	5	2.6	2.6
Late Majority	57	29.7	32.3
Early Majority	105	54.7	87.0
Early Adopters	22	11.5	98.4
Innovators	3	1.6	100.0
Total	192	100.0	

Figure 2 Frequency of the HR TALC



HR Efficiency included two dimensions which resulted from factor analyzing the original items that made up the concept (see Table 5). These two dimensions were established in order to differentiate whether HR efficiency could be derived from process-harmonization/transformation issues, and whether the overall effects on HR efficiency could be tracked appropriately. A 6-point Likert scale was applied to each dimension. The **'HR Efficiency – Process Transformation'** was based on responses to whether the process of transformation of new HR technology had an effect on: (1) cost per process output, (2) time per process output, (3) cost/budget of HR function, and (4) overall HR ratios.

The **'HR Efficiency – Track Advantage'** was based on the extent to which HR professionals were able to take advantage of the SAP HR technology investments to track: (1) operational performance, (2) employee performance, (3) supplier performance, (4) customer behavior/satisfaction, and (5) human capital.

Table 5 Overview of HR efficiency and HR effectiveness

Group item	Factor number	Factor Name	Total variance	% of variance
HR efficiency	1	Process of Transformation	2.891	72.263
		Take Advantage	3.042	60.844
HR effectiveness (IMPACT)	2	Departmental	6.85	57.15
		Organizational	2.17	18.074
HR effectiveness (INVOLVEMENT)	3	Strategic	7.019	35.093
		Administrative	2.959	14.797
		Operational	1.862	9.309
		Coaching Workforce	1.138	5.692
		Process Redesign	1.056	5.281
HR effectiveness (SATISFACTION)	4	Solving Routine HR Admin	4.31	53.9
		Contribute to the Bottom-Line Results	1.21	15.11

HR Effectiveness (hereafter HRE) was measured using three dimensions as described hereafter, also resulting from factor analysis (Table 5). A 6-point Likert scale was applied to each dimension. **'HRE – Impact'** was based on responses to whether the process of transformation of new HR technology had an effect on the organization, and on the departmental effectiveness. **'HRE – Involvement'** was measured by tapping respondents answers to the extent of which HR personnel was involved in about twenty activities. **'HRE – Satisfaction'** was measured by asking how satisfied HR professionals were that the SAP HR technology allowed them to perform certain activities.

Sample characteristics

Of the 192 respondents, 59 were executives in HR systems, 31 HR professionals (specialist, generalist, administrative), 22 heads of HR systems, and 15 directors of HR services. In addition, 56 respondents (28 percent) were other Senior HR executives or line managers.

The majority of respondents (41.5 percent) were from the United States, followed by the German speaking countries (i.e., Germany, Austria, Switzerland – 13.3 percent), BENELUX (9.2 percent) and Spain, Portugal, and France (8.7 percent).

Results

Bivariate Analysis

Overall, the ANOVA results show that from among the two possible dimensions that might affect HR efficiency, 'Taking Advantage' plays a major role. This trend is sustained in the subsequent analysis of the basic HR activities with respect to HR efficiency and HR effectiveness. The ANOVA results suggest that the use of innovative HR technology has an effect on both HR departmental and organizational effectiveness. Looking more closely at HR effectiveness – impact, the findings suggest that HR practitioners seem to be able to better perceive the immediate effect on HR departmental effectiveness rather than on organizational effectiveness. The ANOVA findings on HR effectiveness – involvement illustrate that from among the multiple blocks of items, the item operational involvement has the most important role, followed by coaching the workforce and process redesign. Although the item strategic involvement showed no significance for the sample, the item operational involvement includes strategic business partnering as an area of major HR involvement. In more concrete terms and despite the use of a somewhat different operational criteria and study design, these findings corroborate findings reported in the literature. In addition to HR effectiveness – impact and involvement, ANOVA results on satisfaction show that there seem to also be a contribution to the bottom-line results when innovative HR technology is used more extensively, especially the contrast between Early Adopter and Innovator TALC user groups. The relationships between the TALC model and HR efficiency as well as HR effectiveness reported in this study have been found to have a positive effect on organizational and HR departmental productivity.

Multivariate analysis

A 'Decision Tree Method' in combination with a regression and classification algorithm (CHAID) for multivariate analysis was used. This technique identifies configurations and profiles for predicting the criteria (HR efficiency and HR effectiveness). Only results with significant coefficients are presented here (see Figures 3 and 4). Also, note that while many trees were identified, only those 'branches' with the most significant findings are presented herewith.

Figure 3 HRE-Solving Admin to Free HR Time

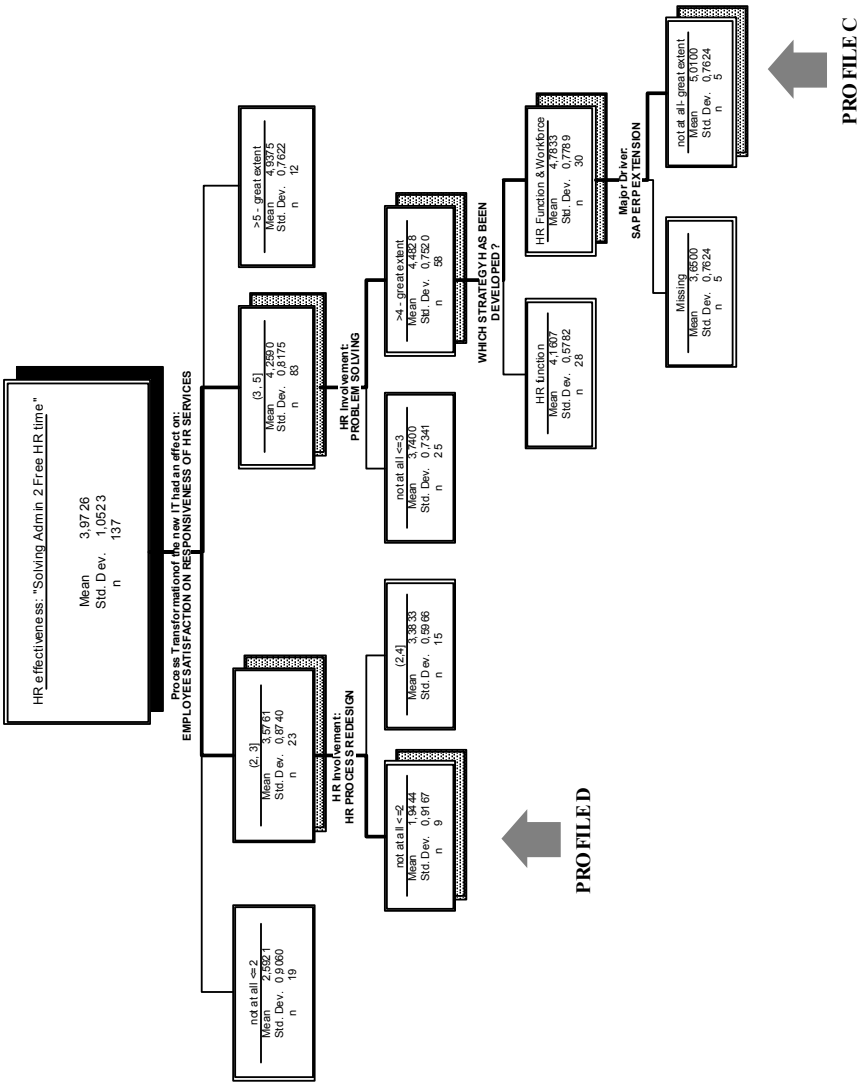


Figure 4 Process of Transformation– cost per process output

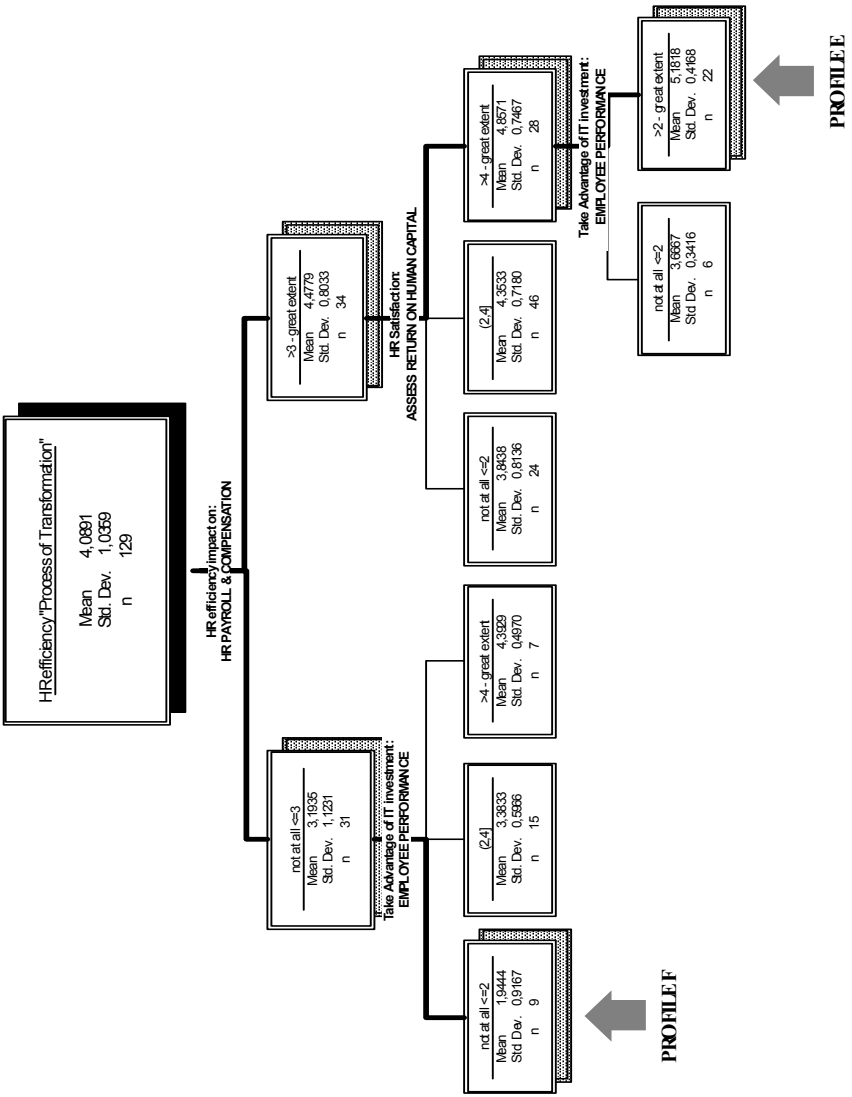


Figure 3 shows the tree model for the HRE **'Solving routine HR administrative work to free HR practitioner's time to focus on strategic issues'**. The global explained variance of the configuration depicted in Figure 3 amounts to 68.37%.

Profile 'C' (explaining **'Solving Admin to Free HR time'** as a criterion) suggests the following configuration: This branch includes firms which show their employee satisfaction from responsiveness of HR services to have higher scores (on a 6-point Likert scale), they value their HR involvement as 'Problem Solving' after the new HR technology has been implemented, and they have developed and implemented both a strategy for the HR function and a strategy for the workforce. Starting from an initial mean of 3.97, the techniques help to improve the prediction up to a mean of 5.01, and 1.03 respectively or increasing the prediction by 26% on the criterion).

Profile 'D' identifies the opposite configuration (on **'Solving Admin to Free HR time'**). This configuration D identifies the following combination: 1) Firms employee satisfaction on responsiveness of HR services are low (i.e., below 5 on a 6-point Likert scale) and 2) score low (below 3) on valuing their HR involvement 'HR process redesign' after the new HR technology has been implemented. This set of combined variables improves the explained mean by an additional 27%.

With regard to the second factor, Figure 4 shows the tree model for the HR efficiency 'Process of Transformation – cost per process output' variable. The total variance explained by this configuration amounts to 74.85%.

Configuration 'E' explains high scores on the **'Process of Transformation– cost per process output'** – Configuration E includes firms for which 'HR Payroll & Compensation' are satisfied and firms who are able to take advantage of their HR technology investments to track 'Employee Performance'. Using this configuration, the prediction is improved by 27%.

Configuration 'F' explains low scores on the **'Process of Transformation– cost per process output'** – Configuration F includes the following: 1) Firms which have had low score on HR efficiency impact on the HR activity 'HR Payroll & Compensation' and (2) are able to take advantage of HR technology investments to track 'Employee Performance'. This set of combined variables increases the prediction by 52% (from a mean of 4.1 to 1.9) on the criterion of the Process of Transformation – cost per process output.

Discussion and conclusion

The findings focus on the links between innovative HR technology and their strategic implications for Human Resource Management. While the bivariate analysis (using the ANOVAs) provides some explanation, more interesting results emerge from the multivariate analyses. The configurational predictions presented here are based on the assumptions that implementing Human Resource Management Systems (HRMS) within the HR department will result in higher HR efficiency and HR effectiveness and will ultimately contribute to the bottom-line results of an organization. The findings identify the configurations which add significantly to good or poor HR efficiency and HR effectiveness dimensions throughout the usage and implementation of HR technology. It seems that innovative HR technologies play a strategic and operational role in adding value to the HR department's performance. The results show that when some HR technology functionalities are absent or poorly implemented, the detrimental consequences for the HR department could be devastating. To some extent, these results are in line with what numerous researchers, HR consultants as well as HR vendors, have suggested. The method used to examine this net effect was borrowed from the data-mining field and helped to detect various profiles (i.e., best performance and worst performance) containing different configurations of HR technology and HR activities related to the implemented HRMS functionalities. Within these configurations, the high-performing organizations use advanced HRM strategies and contemporary/virtual HR practices in order to affect the bottom-line.

This paper attempted to look at HR departments in terms of their TALC profile and connect it to the emerging literature on the HRM-resource-based view of the firm. (Colbert 2004). This TALC taxonomy can prove instrumental to firms and HR professionals considering an 'internal outsourcing' of administrative HR tasks to the newly developed web-based HR technologies as vital delivery channels for their HR services (Vosburgh 2003), thus freeing valuable time of the HR professionals to advance strategic responsibilities.

Furthermore, this paper explores the relationships between various streamlined functionalities into HR technology applications and strategic HCM in organizations using the TALC model for evaluating the current status of the implementation. Some elements are borrowed from the resource-based view of the firm as the linking pins (Colbert 2004; Wernerfelt 1984). In this sense, apart from the obvious need to look at how exactly the different TALC users can be related to HR efficiency and HR effectiveness and finally contribute to the bottom-line results of the organization, the message in this paper is that, despite the need for more empirical research to test the implementation of the TALC model, the proposed conceptual framework can be most instrumental to position the HR department in their adoption behavior. Very little and controversial conclusions emerge

from studies examining the trade offs between gain and losses when HR efficiency is enhanced and downsizing occurs (Dolan et al. 2000). Nevertheless, the leverage of HR effectiveness due to usage of new HR technologies, (i.e., web-based applications) has until now not been studied systematically by scholars.

When innovative HR technology is in place, a better formulation and decision making structure can be derived. The potential use of these new technologies can enhance both efficiency and effectiveness of the HR department.

In practical terms, HR executives applying the TALC model while handling complex IT topics such as implementing, streamlining, reengineering, and upgrading HR functionalities in the organization can extend their body of knowledge and expertise in their day-to-day vocation. Thus, they can make more progress in their strategic HCM development, along with the increasingly common tendency of companies to integrate their Enterprise Resource Planning (ERP) with HR. It may help them to align innovative HR technology with their idiosyncratic HR practices in a step-by-step approach in line with their technological knowledge and responsiveness, permitting a better usage of financial, strategic, and human resources within the department and the firm. Furthermore, they can use the 'TALC – HR Functionality Matrix' as a practical project-planning tool for their individual HR technology-implementation purposes in accordance with their profile and their willingness to dramatically change their past behavior (i.e., traditional/manual) with the promise of gaining equally dramatic new benefits at a contemporary/virtual HCM level.

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